

# Independence Community College

## Transfer Program to University of Kansas

### B.S. Engineering Physics

(Aerospace Systems, Chemical Systems, Digital Electronic Systems, Electromechanical Control Systems)

Number to call at KU for advising: (785) 864-4626

Website: [www.eecs.ku.edu](http://www.eecs.ku.edu)

Sixty-four credit hours may be transferred to KU from community colleges. Transfer students must have at least a 3.0 GPA and proof of competency in calculus.

#### **Requirements (all students):**

The only classes listed are the ones that could be taken at a 2 year College.

#### **Aerospace Systems:**

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

#### **KU Course Requirements**

#### **Independence Equivalents**

<b>MATHEMATICS</b>				<b>Core</b>
MATH 121 Calculus I	5		MAT 2025 Analytic Geom & Calc 2	5 GE12
MATH 122 Calculus 2	5		MAT 2033 Analytic Geometry & Calculus 3 (must take MAT 2025+2033)	5
MATH 223 Linear Algebra	3		No equivalent	
MATH 290 Elementary Linear Algebra	2		No equivalent	
MATH 220 Differential Equations	3		No equivalent	

<b>NATURAL SCIENCES</b>				<b>Core</b>
PHSX 211 & 216 Engineering Physics	5		PHS 2055 Engineering Physics	5 GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHS 2065 Engineering Physics 2	5 GE3N
CHEM 130 Chemistry	5		PHS 1025 College Chemistry	5 GE12, GE3N

#### **Chemical Systems:**

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

#### **KU Course Requirements**

#### **Independence Equivalents**

<b>MATHEMATICS</b>				<b>Core</b>
MATH 121 Calculus I	5		MAT 2025 Analytic Geom & Calc 2	5 GE12
MATH 122 Calculus 2	5		MAT 2033 Analytic Geometry & Calculus 3 (must take MAT 2025+2033)	5
MATH 223 Linear Algebra	3		No equivalent	
MATH 290 Elementary Linear Algebra	2		No equivalent	

<b>NATURAL SCIENCES</b>				<b>Core</b>
PHSX 211 & 216 Engineering Physics	5		PHS 2055 Engineering Physics	5 GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHS 2065 Engineering Physics 2	5 GE3N
CHEM 130 Chemistry	5		PHS 1025 College Chemistry	5 GE12, GE3N
CHEM 135 Chemistry 2	5		PHS 1035 College Chemistry 2	5 GE3N, GE12
CHEM 330 & 331 Organic Chemistry	5		PHS 2025 Organic Chemistry 1	5

#### **Digital Electronic Systems:**

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

### KU Course Requirements

### Independence Equivalents

MATHEMATICS					Core
MATH 121 Calculus I	5		MAT 2025 Analytic Geom & Calc 2	5	GE12
MATH 122 Calculus 2	5		MAT 2033 Analytic Geometry & Calculus 3 (must take MAT 2025+2033)	5	
MATH 290 Elementary Linear Algebra	2		No equivalent		
MATH 220 Differential Equations	3		No equivalent		

NATURAL SCIENCES					Core
PHSX 211 & 216 Engineering Physics	5		PHS 2055 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHS 2065 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5		PHS 1025 College Chemistry	5	GE12, GE3N

### Electromechanical Control Systems:

The courses listed below are **REQUIRED**. These courses **MAY be taken to complete the KU CORE**, but if they are not, this additional coursework is necessary to complete degree requirements. 132 hours are required for a degree.

### KU Course Requirements

### Independence Equivalents

MATHEMATICS					Core
MATH 121 Calculus I	5		MAT 2025 Analytic Geom & Calc 2	5	GE12
MATH 122 Calculus 2	5		MAT 2033 Analytic Geometry & Calculus 3 (must take MAT 2025+2033)	5	
MATH 290 Elementary Linear Algebra	2		No equivalent		
MATH 220 Differential Equations	3		No equivalent		

NATURAL SCIENCES					Core
PHSX 211 & 216 Engineering Physics	5		PHS 2055 Engineering Physics	5	GE3N, GE11, GE12
PHSX 212 & 236 Engineering Physics			PHS 2065 Engineering Physics 2	5	GE3N
CHEM 130 Chemistry	5		PHS 1025 College Chemistry	5	GE12, GE3N

### KU Core Curriculum (additional requirements not covered by degree requirements)

Additional courses that satisfy the KU Core are continuously updated and available at <http://kucore.ku.edu/courses>.

### KU Course Requirements

### Independence Equivalents

Goal 1: Critical Thinking and Quantitative Literacy (1 Unit from each outcome)					
Outcome 1			GE11		
ENGL 211 Intro to Drama	3		ENG 2043 Intro Dramatic Literature		3
PHIL 140 Intro to Philosophy	3		SOC 2003 Intro To Philosophy		3
PHIL 148 Reason and Argument	3		SOC 2073 Logic and Classical Reasoning		3
PHIL 160 Intro to Ethics	3		SOC 1073 Ethics		3
SOC 104 Elements of Sociology	3		SOC 1003 Sociology		3
SOC 160 Social Problems/American Values	3		SOC 2023 Social Problems		3
PHSX 114 College Physics I	4		PHS 1055 General Physics		5
PHSX 211 General Physics I	4		PHS 2055 Engineering Physics		5
Outcome 2			GE12		
MATH 101 College Algebra	3		MAT 1023 or 1025 College Algebra		5
MATH 125 Calculus	4		MAT 1055 A Geometry and Calculus		5
CHEM 130 Chemistry	5		PHS 1025 College Chemistry		5

CHEM 135 Chemistry 2	5		PHS 1035 College Chemistry 2	5
PHSX 114 College Physics	5		PHS 1055 General College Physics	5
PHSX 211 General Physics	5		PHS 2055 Engineering Physics	5
MATH S365 Elementary Stats	3		MAT 1103 Elementary Stats	3

### Goal 2: Communication (3 Units) -two from outcome 1 and one from outcome 2

Outcome 1		GE21	
ENGL 101 Composition	3	ENG 1003 English Composition	3
ENGL 101 Composition	3	ENG 1005 English Composition	3
ENGL 102 Critical Reading and Writing	3	ENG 1013 English Composition 2	3
ENGL 211 Intro to Drama	3	ENG 2043 Intro Dramatic Literature	3
Outcome 2		GE22	
COMS 130 Speaker-Audience Communication	3	COM 1203 Speech	3

### Goal 3: Breadth of Knowledge (3 Units) -one from each category

Arts & Humanities		GE3H	
ANTH 110 Intro to Archaeology	3	SOC 1053 Intro to Archaeology	3
HIST 121 Modern Latin America	3	SOC 2083 Modern Latin America	3
ART 101 Drawing I	3	AED 1023 Drawing and Composition	3
HA 100 Intro to Western Art History	3	AED 1043 Art Appreciation	3
PHMD 101 Fundamentals of Photography	3	COM 1403 Photo I	3
		ENG 1083 American Literature	3
		ENG 2113 American Literature 2	3
		ENG 2083 Contemporary Dramatic Literature	3
		ENG 2073 Introduction to Modern Novel	3
		ENG 2123 British Literature	3
		ENG 2133 British Literature 2	3
		ENG 2143 Survey of Black Literature	3
		ENG 2163 Inge and Contemporary Playwrights	3
ENGL 211 Intro to Drama	3	ENG 2043 Intro Dramatic Literature	3
REL 104 Intro to Religious Studies	3	REL 1000 World Religions	3
		REL 1003 Old Testament History	3
		REL 1013 New Testament History	3
PHIL 140 Intro to Philosophy	3	SOC 2003 Intro To Philosophy	3
PHIL 148 Reason and Argument	3	SOC 2073 Logic and Classical Reasoning	3
PHIL 160 Intro to Ethics	3	SOC 1073 Ethics	3
THR 100 Intro to Theatre	3	THR 1013 Theatre Appreciation	3
THR 106 Intro to Acting	3	THR 1023 Introduction to Acting	3
HIST 128 Hist US thrgh Civil War	3	HIS 1023 United States History (1850-1930)	3
HIST 129 Hist of US After Civil War	3	HIS 1063 United States Hist (Contemp)	3
		HIS 1003 History of Early Civilization	3
		HIS 1013 History of Modern Civilization	3
HSES 244 Intro Phys Ed and Sport Studies	3	PED 1713 Intro to Physical Education	3
Natural Sciences		GE3N	
ASTR 191 Contemporary Astronomy	3	PHS 1083 Descriptive Astronomy	3
ASTR 191 & 196 Contemporary Astronomy	5	PHS 1085 Descriptive Astronomy	5
BIOL 100 & 102 Principals of Biology	3	BIO 1005 General Biology	5
BIOL 150 Prn Molecular/Cellular	5	BIO 1115 Biology : Cell & Molecular	5
BIOL 152 Princ of Organismal Biology	5	BIO 2115 Biology: Organismal Biology	5
BIOL 200 & 203 Microbiology	5	BIO 2055 Microbiology	5
CHEM 125 College Chemistry	4	PHS 1015 General Chemistry	5
CHEM 130 Chemistry	5	PHS 1025 College Chemistry	5
CHEM 135 Chemistry 2	5	PHS 1035 College Chemistry 2	5
EVRN 148 Scientic Princ Envrn Study	3	BIO 2035 Environmental Biology	3
PHSX 114 College Physics	5	PHS 1055 General College Physics	5
PHSX 211 General Physics	5	PHS 2055 Engineering Physics	5
PHSX 212 General Physics II	5	PHS 2065 Engineering Physics 2	5
GEOL 101 & 103 Intro to Geology	3	PHS 1105 Geology	5
	5	PHS 1005 Physical Science	5

			BIO 1015 Botany	5
			BIO 1025 Zoology	5
<b>Social Sciences</b>			<b>GE3S</b>	
EPSY S305 Dev and Learning of Young Child	3		BEH 1013 Child Psychology	3
			POL 1013 Intro to Political Science	3
COMS 244 Intr Personal Comm	3		COM 1233 Interpersonal Communication	3
ECON 142 Princ of Microeconomics	3		BUS 2023 Microeconomics	3
ECON 144 Princ of Macroeconomics	3		BUS 2033 Macroeconomics	3
POLS 110 Intro to US Politics	3		POL 1023 American Government	3
PSYC 104 General Psychology	3		BEH 1003 General Psychology	3
			BEH 2003 Developmental Psychology	3
SOC 104 Elements of Sociology	3		SOC 1003 Introduction to Sociology	3
SOC 220 Sociology of Families	3		SOC 1013 Sociology of Families	3
ANTH 100 General Anthropology	3		SOC 1023 Anthropology	3
SW 220 Social Work, Soc Welfare and US society	3		SOC 1213 Intro to Social Work	3
POLS 170 Intro to International Politics	3		POL 1043 International Politics	3

<b>Goal 4: Culture and Diversity (1 Unit from each outcome)</b>				
<b>Outcome 1</b>			<b>AE41</b>	
SOC 160 Intro to Social Problems	3		SOC 2023 Social Problems	3
SOC 104 Elements of Sociology	3		SOC 1003 Introduction to Sociology	3
SOC 220 Sociology of Families	3		SOC 1013 Sociology of Families	3
AAAS 106 Black Experience in Americas	3		HIST 1163 African American History	3
			ENG 2143 Survey of Black Literature	3
<b>Outcome 2</b>			<b>AE42</b>	
HA 100 Intro to Western Art History	3		AED 1043 Art Appreciation	3
			HIS 1003 History of Early Civilization	3
ANTH 100 General Anthropology	3		SOC 1023 Anthropology	3
REL 104 Intro to Religious Studies	3		REL 1000 World Religions	3
GEOG 100 World Regional Geography	3		SOC 2013 World Regional Geography	3
SPAN 212 Intermediate Spanish	3		FRL 2035 Spanish 3	5
SPAN 216 Intermediate Spanish 2	3		FRL 2043 Spanish 4	3
POLS 170 Intro to International Politics	3		POL 1043 International Politics	3

<b>Goal 5: Social Responsibility and Ethics (1 Unit from either outcome)</b>				
<b>Outcome 1</b>			<b>AE51</b>	
PHIL 160 Intro to Ethics	3		SOC 1073 Ethics	3
SOC 160 Intro to Social Problems	3		SOC 2023 Social Problems	3
<b>Outcome 2</b>			<b>AE52</b>	
No Equivalencies Established				

<b>Goal 6: Integration and Creativity (1 Unit)</b>				
<b>Outcome 1</b>			<b>AE61</b>	
No Equivalencies Established				